

bundels gevorm (ekstraxilêre vesels). Tussen hierdie jong veselselle is inmeekaargedrukte protofloëemelemente te onderskei as verdikte selwandgedeeltes (fig. 8).

Daar is ook nie 'n skerp grens tussen die proto- en metaxileem nie. Metaxileemelemente word ongeveer $800\text{--}900\mu$ en $630\text{--}850\mu$ onder die top by *P. repens* en *L. adscendens* onderskeidelik, aangetref. Hulle is effens groter en lê meer in radiale rye as die protoxileemelemente. In die metaxileem kom, buiten die xileemparenchium, ook tracheale elemente voor met spiraal-, leer- en netverdikkings op die wande. Die spirale van metaxileemvate is nog dig op mekaar as gevolg van min lengtestrekking.

Terwyl differensiasie van floëem en xileem plaasvind, vergroot die prokambiumstring nog deur seldelings in die middel van die string. Die delings word geleidelik meer periklinaal georiënteer en die prokambiumselle vertoon al meer 'n afgeplatte vorm. Die derivate van die prokambium (veral die metaxileem en -floëem) toon dus al meer 'n radiale rangskikking van elemente (ongeveer $1\text{--}1.6\text{ mm}$ en 1 mm onder die top by *P. repens* en *L. adscendens* onderskeidelik).

Terwyl meer metaxileemvate gevorm word, verloor die protoxileemvate geleidelik hul funksie, vanaf ongeveer $1\text{--}1.6\text{ mm}$ onder die top by *P. repens* en $1.0\text{--}1.4\text{ mm}$ by *L. adscendens*. Aangesien die spiraalvormige wandverdikkings van die protoxileemelemente ver uitmekaar gerek is as gevolg van groot lengtestrekking, word die sagte dele tussen die verdikkings maklik platgedruk deur naburige selle. In die baie jong stingel besit die xileemparenchiemselle dun, onverhoude selwande en lewende protoplaste, maar later verdik en verhout die wande van sommige sodat groepe xilêre vesels aan die binnerande van die vaatbundels gevorm word. Deels inmeekaargedrukte xileemelemente is as verdikte selwandgedeeltes tussen die selwand van die jong xilêre veselselle te onderskei (fig. 8).

Die jong vaatbundels lê in 'n onreëlmatige kring, met murgstrale van jong parenchiemselle daartussen (fig. 7). Enkele verspreide vaatbundels is in die skors aanwesig as blaarspore. Die murgstrale (interfassikulêre parenchium) ontstaan uit die oorblywende gedeeltes van die meristeamring, nadat die prokambiumstringe gevorm is. Die interfassikulêre ruimtes is aanvanklik agt tot twaalf selle breed, maar omdat nuwe vaatbundels nog gedurig daar ontstaan, lê die vaatbundels later dig teenmekaar met smal murgstrale, gewoonlik een, soms twee tot drie selle breed, tussenin.

Die dwarsneereekse is gemaak tot ongeveer vier of vyf mm onder die apikale meristeam, waar volwasse primêre vaatweefsel (d.w.s. vaatbundels met proto- en metaxileem en metafloëem) aangetref word. Die stingel van *P. repens*

is hier ongeveer 3·66 mm in deursnee en besit 60—78 vaatbundels in die kring. Dié van *L. adscendens* is ongeveer 1·42 mm in deursnee en besit 35—38 vaatbundels.

OPSOMMING

Die bou van die stingelgroei-punt en differensiasie van die primêre weefsels onder die groei-punt is by *Protea repens* (L.) Linn. non Thunb. en *Leucandendron adscendens* R. Br. ondersoek en vergelyk. Dit stem tot 'n groot mate by die twee soorte ooreen. In die apikale meristeem is 'n tunica van twee lae en 'n corpus te onderskei. Drie sitohistologiese sones kom voor, nl. 'n sentrale sone, perifere sone en ribmeristeem. Differensiasie van die skors, murg en prokambiumstringe en vaatweefsel is nagegaan. Die prokambiumstringe differensieer akropetaal; primêre floëem differensieer akropetaal daarin; primêre xileem differensieer akropetaal en basipetaal vanuit die blaarbasisse.

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NOTES ON MESEMBRYANTHEMUM AND ALLIED GENERA

H. M. L. Bolus

Lampranthus stoloniferus L. Bol. sp. nov. Plantae 4 visae, ferae caespitosae glabrae, ca. 3 cm. altae, ad 5 cm. diam., deinde ramos reptantes, ad 10 cm. longos, internodiis 1—5 cm. longis, emittentes; ramuli ultimi floriferi saepius 2-foliati, steriles ad 6-foliati, internodiis inclusis; folia ascendentia, altero paris interdum subfalcato, supra visa linearia, superne leviter angustata, obtusa vel subacuta, lateraliter visa superne non, vel leviter, angustata, lateribus convexulis, carina obscura, superne cum marginibus interdum, vel in novellis saepius, denticulata, punctis leviter prominentibus, 1—2 cm. longa, 3—4 mm. lata diametroque; flores solitarii meridiani; pedunculus basi bracteatus; bractee foliis similes, 6—13 mm. longae; receptaculum fere semiglobosum, ad 3 mm. longum, 6 mm. diam.; sepala 5, in flore expanso recurva, e basi superne angustata, obtusa, interiora anguste marginata, subaequilonga, ad 7 mm. longa, basi 2—3 mm. lata; petala 1—2-seriata, subaequilonga, prope basim non, vel leviter, angustata, purpureo rosea, 8—9 mm. longa, ad 1·5 mm. lata; staminodia subnulla; filamenta ca. 7-seriata, gracillima, conice conferta, alba vel prope apicem rosea, ad 4 mm. longa, interiora prope basim papillata; discus crenulatus; ovarii lobi obtuse compressi, ad 0·75 mm. elevati; stigmata 5, gracilia, 4—5 mm. longa; capsula infra fere semiglobosum, punctata, 8 mm., expansa 1·2 cm., diam., supra obscure angulata, fere plana, suturis vix ad 1 mm. elevatis, carinis insigne profunde laceratis.

Cape Province: in dit. Sutherland; "55 miles E. of Karooport, alt. 3,900 ft." June 1965, *F. J. Stayner*. Karoo Garden 214/65.

Lampranthus vredenburgensis L. Bol. sp. nov. (*Lunati*).—Diffuse ramosus; rami decumbentes, ad 15 cm., vel culti ca. 24 cm., longi, internodiis 4—30 mm. longis; folia matura ascendentia, alterum paris $\pm$ lunatum, ad 8 mm. diam., alterum saepius vix, vel non, lunatum, saepe 5—6 mm. diam., supra acuta, 5—6 mm. lata, culta ad 2·5 cm. longa, vagina ca. 1 mm. longa; flores 1—3-nati; pedunculi parum infra medium vel prope basim bracteati, ad 1·4 cm., vel culti ad 3 cm., longi; bractee foliis similes, 8—13 mm. longae; receptaculum subclavatum, prope apicem leviter constrictum, 5 mm. longum, apice 5—7 mm. diam.; sepala 5, superne leviter incrassata, e prope basim superne leviter angustata, acuta vel obtusa, omnia $\pm$ marginata, 5—6 mm. longa, basi 2—3 mm. lata; petala subaequilonga, 2—3-seriata, e medio inferne angustata, obtusissima, laete rosea vel purpureo rosea vel interdum apud basim pallidiora, ad 8 mm. longa, 1·5—2 mm. lata; staminodia ad stamina conice conferta adpressa,

prope apicem tantum recurva, ciliate papillata, dimidio inferiore albo, superiore roseo; filamenta ca. 5-seriata, rosea, ad 4 mm. longa, intima prope apicem papillata; nectarium e glandulis 5, fere semilunatis crenulatis, interdum approximatis vel fere contiguis, compositum; ovarii lobi obtuse compressi, ad 1 mm. elevati; stigmata 5, anguste subulata, profunde posita, atre purpurea, 1·5—2 mm. longa.

Cape Province: in dit. Malmesbury; Vredenburg, "8 miles from Saldhana Bay," *H. Hall* 2793. N.B.G. 345/64. Fl. Aug. 1965. "Occasional near coast on granite outcrops. It appears to change in cultivation rather swiftly."

Lampranthus nelii L. Bol. sp. nov. (*Adunca*).—Planta 1 visa, fera gracilis, 14 cm. alta; rami 1—1·5 mm. diam., internodiis 6—20 mm. longis; folia fere erecta, conspicue aristata, praecipue in novellis, dorso rotundo, 1—1·7 cm. longa, 1—1·5 mm. diam.; pedunculi 1—1·3 cm. longi; receptaculum obconicum, 2 mm. longum, ad 4 mm. diam.; sepala 5, e parum supra basim angustata, aristata, arista 1—3 mm. longa, omnia $\pm$ ustulate marginata, in floribus senectis valde recurva, 6—8 mm. longa, basi 2—3 mm. lata; petala 2—3-seriata laxa, inferne leviter angustata, obtusa rosea, inferne pallidiora, 9—10 mm. longa, saepius 1 mm. lata; staminodia ad stamina conice conferta appressa eaque bene superantia, inferne ciliate papillata et alba, deinde rosea, apicem versus alba, filamenta 3—4-seriata, alba, ad 4 mm. longa, intima prope apicem dense papillata, antheris pollineque ochraceis; discus sat conspicuus, crenulatus; ovarium ad 1 mm. elevatum, lobis obtuse compressis; stigmata 5, gracilia, stamina bene excedentia, ad 6 mm. longa.

Cape Province: in dit. Cape; Fisantekraal, Jul. 1965, *J. E. Nel*. Bolus Herbarium 27732.

This species is chiefly distinguished by the long slender stigmas which well exceed the stamens.

Cheiridopsis albiflora L. Bol. sp. nov. (*Eucheiridopsis*).—Planta 1 visa, cum flore clauso ca. 7 cm. alta, 8 cm. diam.; caulis 8 mm. diam.; rami primarii ad 4 mm. diam.; partes herbaceae $\pm$ velutinae, glaucae virides, inconspicue punctatae, punctis viridibus; ramuli floriferi 2-foliati; folia matura ascendentia, supra visa e parum infra medium superne leviter angustata, acuta vel subobtusata, breviter aristata, arista persistente, ad 4·4 cm. longa cum vagina ad 8 mm. longa, 6—9 mm. lata, lateraliter visa superne $\pm$ ampliata, rotunde truncata, obtuse carinata, lateribus convexulis, supra medium ad 1·2 cm. diam.; gemmae axillares 4-foliatae; folia inferiora 2—3·5 cm. longa cum vagina pellucida ad 2·7 cm. longa, superiora lateraliter visa superne leviter ampliata, acute carinata, ad 2 cm. longa; pedunculus in vagina bractearum interdum inclusus, ad 1 cm. longus; bractee foliis subsimiles, ad 2·5 cm. longae cum vagina ad 1·1 cm.

longa, ad 1 cm. diam.; receptaculum semiglobosum, 4—5 mm. longum, 9—10 mm. diam.; sepala 5, exteriora carinata aristata, interiora marginata, prope apicem compressa, 6—8 mm. longa, basi 5—7 mm. lata; petala densa, ca. 6-seriata, ex infra medium inferne angustata, obtusa vel interiora acuta, nitente nivea, in flore maximo ad 2·2 cm. longa, ad 2 mm. lata; filamenta ca. 4-seriata, basim versus incumbentia, deinde erecta, alba, ad 6 mm. longa, antheris pollineque albidis; discus inconspicuus crenulatus; ovarium supra in dimidio exteriore planum, deinde leviter elevatum, lobis dorsale complanatis; stigmata 10, angustissime subulata, 3—4 mm. longa; capsula pallide cinerea, infra apud basim fere plana, ad 4 mm. longa, 1·1 cm., expansa 1·8 cm., diam., valvis valde reflexis, alis angustissimis, superne liberis, carinis saturate brunneis, inferne parallelis, superne patentibus, dimidium valvae non attingentibus, rigide ciliatis vel rarius lacerulatis, supra circa marginem plana, medio ad 2 mm. elevato, suturis leviter compressis, 0·5—0·75 mm. elevatis.

Cape Province: Namaqualand; Kinderlé Mountain, *P. van Heerde*. Fl. hort. van Heerdei Aug. 1965. Bolus Herbarium 27731.

"Collected a few months ago and now flowering in my garden. It is a beautiful flower." (*P. van Heerde*).

Mesembryanthemum liebendalense L. Bol. sp. nov.—Plantae 15 visae, ferae erectae gracillimae, cum floribus 3—6·5 cm. altae, ad 3 cm. diam.; partes herbaceae virides, nitente papillosae, papillis rotundis parvis; caulis ad 2 mm. diam., e basi ramosus; rami ascendentes vel inferne patentes, superne erecti; folia mox marcescentia, linearia, supra plana vel leviter concava, superne angustata, acuta vel vix angustata, obtusa, dorso rotundo, 6—15 mm. longa, 1·5—2 mm. lata diametroque, infima opposita, suprema receptaculum attingentia; flores solitarii subsessiles; receptaculum obtuse 5-angulatum, 2—3 mm. longum, 1·5—4 mm. diam.; tubus calycis 1—2 mm. longus, segmentis 5, linearibus vel lanceolate linearibus, obtusis vel acuminatis, 6—9 mm., vel rarius ad 11 mm., longis, basi 1—1·75 mm. lata; tubus corollae 2—3 mm. longus, segmentis ca. 3-seriatis, subaequilongis obtusis, omnino albidis vel superne pallide roseis, ad 8 mm., vel in flore maximo viso ad 20 mm., longis, 0·5—0·75 mm. latis; staminodia pauca; filamenta ca. 3—4-seriata, sat pauca, dimidium, vel partem tertiam, corollae attingentia, antheris ante dehiscientiam ad 2·5 mm. longis, cum polline luteis, demum albis; ovarii lobi sat acute compressi, ad per 2 mm. elevati; stigmata 5, gracilia, superne leviter angustata, 5—10 mm. longa cum cauda 1 mm. longa.

Cape Province: in dit. Vanrhynsdorp; "on the farm 'Liebendal,' near Vredendal, Nov. 1964," *H. Hall* 2882.

"This little midget grew in enormous numbers on the farm Liebendal." (*H. Hall*.)